10/28/13 Agenda

- Warm Up

- Review Homework - Worksheet 2 - Angle Measures

- Section 4.7 - Isosceles & Equilateral Triangles

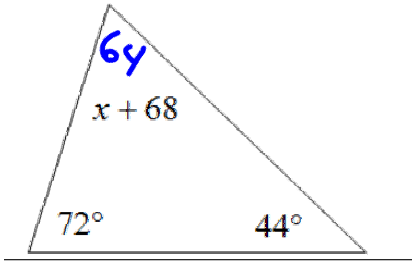
- Start Homework
    - Worksheet 3 - Isosceles & Equilateral Triangles

Homework Out!

Warm Up:

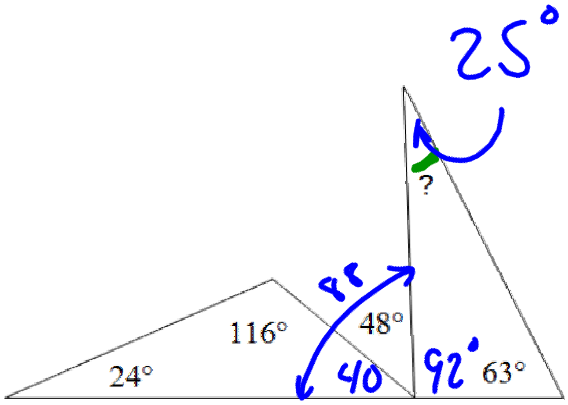
Solve for x.

$x = -4$



$72 + 44 + x + 68 = 180$

Find the measure of each angle indicated.

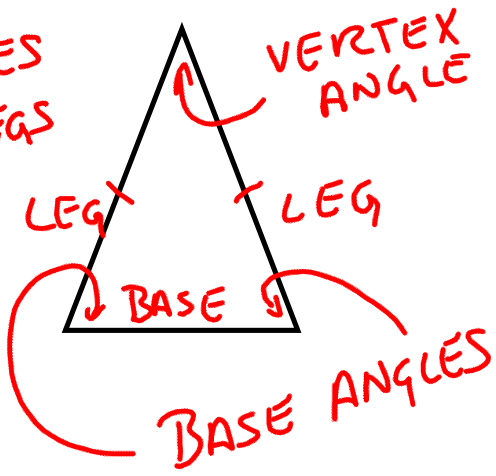


Section 4.7 - Isosceles & Equilateral Triangles Target 4C

Goal: Identify parts of an Isosceles triangle and use the properties of Isosceles triangles to solves algebraic problems.

Parts:

legs: 2 CONGRUENT SIDES
vertex angle: FORMED BY LEGS
base: 3RD SIDE
base angles: 2 ANGLES ON THE BASE



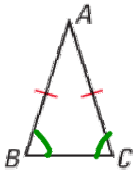
THEOREMS *For Your Notebook*

THEOREM 4.7 Base Angles Theorem

If two sides of a triangle are congruent, then the angles opposite them are congruent.

If $\overline{AB} \cong \overline{AC}$, then $\angle B \cong \angle C$.

Proof: p. 265

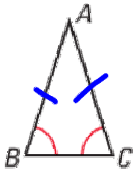


THEOREM 4.8 Converse of Base Angles Theorem

If two angles of a triangle are congruent, then the sides opposite them are congruent.

If $\angle B \cong \angle C$, then $\overline{AB} \cong \overline{AC}$.

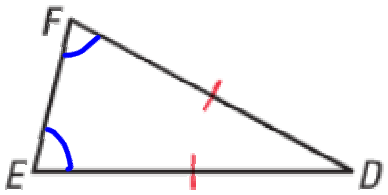
Proof: Ex. 45, p. 269



Section 4.7 - Isosceles & Equilateral Triangles Target 4C

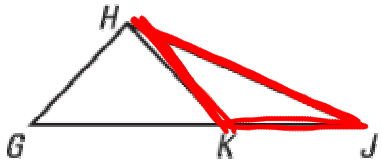
In $\triangle DEF$, $\overline{DE} \cong \overline{DF}$. Name two congruent angles.

$\angle F \cong \angle E$

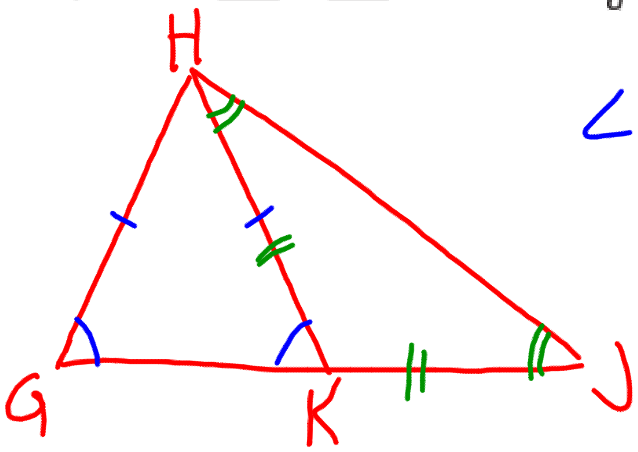


Copy and complete the statement.

1. If $\overline{HG} \cong \overline{HK}$, then $\angle$? $\cong \angle$?.
2. If $\angle KHJ \cong \angle KJH$, then ? $\cong$?.



$\angle HGK \cong \angle HKG$



$\overline{HK} \cong \overline{KJ}$

Section 4.7 - Isosceles & Equilateral Triangles Target 4C

Recall that an equilateral triangle has three congruent sides.

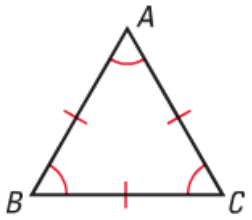
COROLLARIES *For Your Notebook*

Corollary to the Base Angles Theorem

If a triangle is equilateral, then it is equiangular.

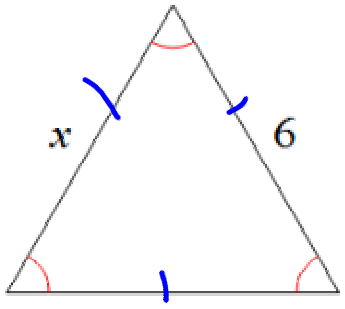
Corollary to the Converse of Base Angles Theorem

If a triangle is equiangular, then it is equilateral.

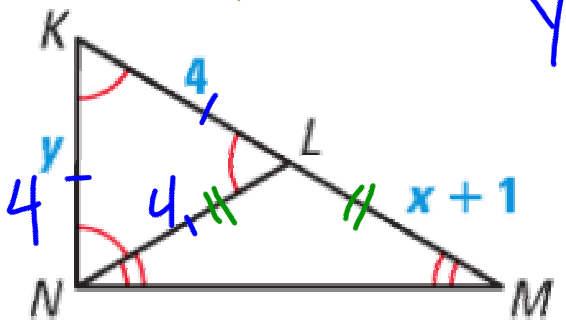


Find the value of x.

$x = 6$



xy GEOMETRY **Find the values of x and y in the diagram.**

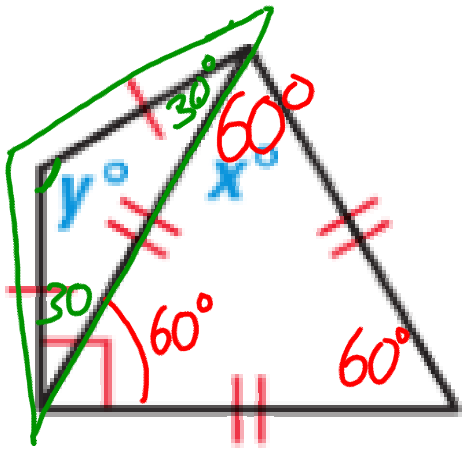


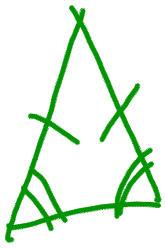
$Y = 4$ $X = 3$

$X + 1 = 4$

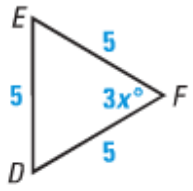
$X = 60^\circ$

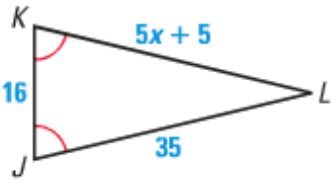
$Y = 120^\circ$

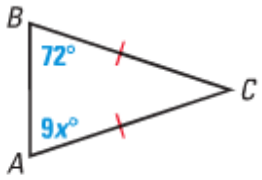




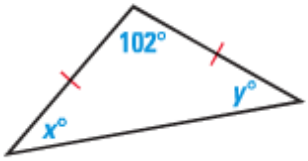
xy ALGEBRA Find the value of x.

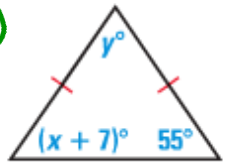
11. 

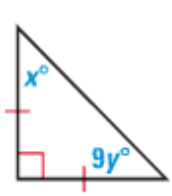
12. 

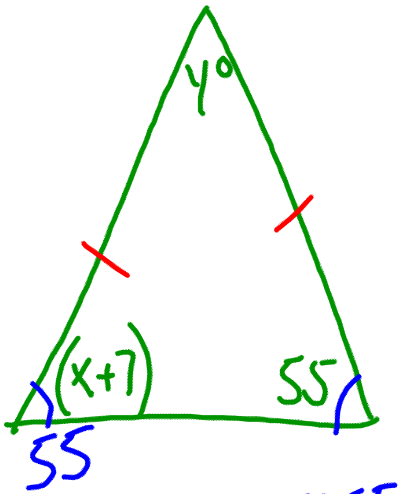
13. 

xy ALGEBRA Find the values of x and y.

15. 

16. 

17. 



$x + 7 = 55$

$x = 48$

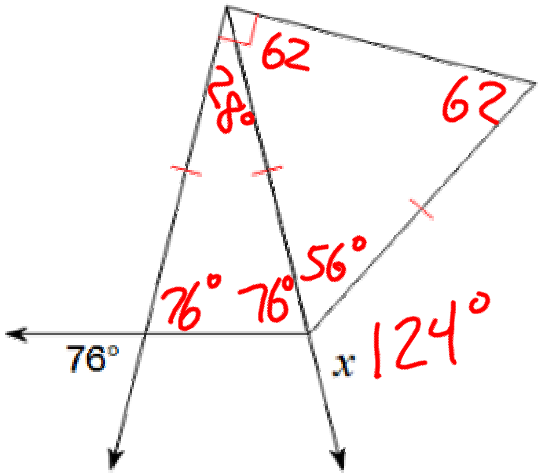
$y = 70°$

$55 + 55 + y = 180$

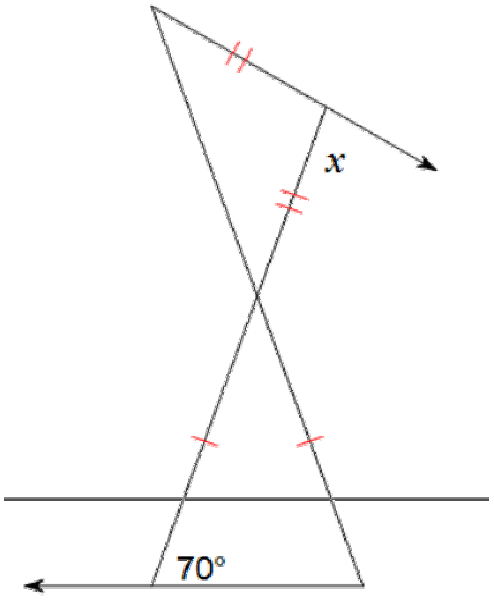
$110 + y = 180$

$y = 70$

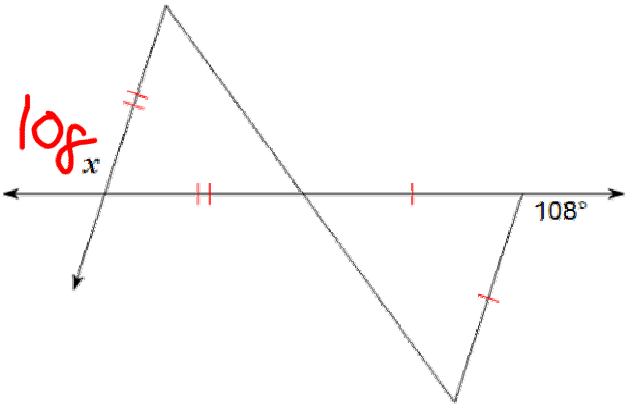
Find the value of x.



Find the value of x.



Find the value of x.



Find the value of x.